



AF/2614

PATENT  
Do. No. 8371-056

IN THE UNITED STATE PATENT AND TRADEMARK OFFICE

In re application of: Sezan, et al.

Confirmation No.: 1864

Serial No.: 09/298,282 Examiner: Scott E. Beliveau

Filed: April 23, 1999 Group Art Unit: 2614

For: DTV DATA SERVICE APPLICATION AND RECEIVER  
MECHANISM

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**TRANSMITTAL OF APPEAL BRIEF  
(PATENT APPLICATION - 37 C.F.R. § 1.192)**

Pursuant to Notification of Non-Compliance With the Requirements of 37 CFR dated August 11, 2003, enclosed are two additional copies of the APPEAL BRIEF in this application. The original Appeal Brief was filed by facsimile transmission on July 28, 2003, along with the required fee.

Any deficiency or overpayment should be charged or credited to deposit account number 13-1703.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C

Julie L. Reed  
Julie L. Reed  
Reg. No. 35,349

MARGER JOHNSON & McCOLLOM, P.C.  
1030 SW Morrison Street  
Portland, Oregon 97205  
503-222-3613  
Customer No. 20575

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22313-1450  
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Janet Sullivan  
Janet Sullivan



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PATENT APPLICATION  
Attorney Do. No. 8371-056

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Ibrahim Sezan and Regis J. Crinon

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APPEAL BRIEF under 37 C.F.R. §1.192

Dear Sir:

In support of the appeal to the final rejection of the claims in the above-referenced application, appellants respectfully submit the following brief.

Statement of the Real Party in Interest under 37 C.F.R. §1.192 (c)(1)

The real party in interest is the party named in the caption of the application.

Status of Related Appeals and Interferences under 37 C.F.R. §1.192(c)(2).

No other appeals or interferences are pending with regard to this application.

Status of all Claims less than 37 C.F.R. §1.192(c)(3).

Claims 1-12 and 14 are pending in the application and stand rejected. Claim 13 had previously been canceled.

Status of Amendments under 37 C.F.R. §1.192(c)(4)

No amendments after final have been filed.

Summary of the Invention under 37 C.F.R. §1.192(c)(5)

The invention is generally directed to a data services authoring system and a receiver for utilizing that data service. The authoring system authors key clips, by analyzing an audiovisual program and filtering out the uninteresting parts of the program. The uninteresting parts are defined as those parts in which a key object or a key event is not occurring. The remaining portions of the program are defined as key clips. These key clips are then correlated to a standardized means of referring to them, namely PSIP information and multiplexed into an MPEG-2 format transmission. See Applicants' specification on pages 6-12 and Figures 1-3.

The receiver can then take the MPEG-2 format transmission and extract the references to the key clips using the PSIP standard references and extract the key clips for the viewer's consumption at a summarizer. The summarizer includes an inference engine that produces program-related and key-clip related information to accompany the key clips. The receiver includes both short-term and long-term storage for storing varying 'views' of the program. See Applicants' specification on pages 14-17 and Figure 4, with regard to the receiver and Figure 5 with regard to the summarizer.

Statement of Issues Presented for Review under 37 C.F.R. §1.192(c)(6)

Claims 1-7 stand rejected by the Examiner under 35 USC 103(a) as being unpatentable over Srinivasan, et al., US Patent No. 6,357,042 ('Srinivasan'), in view of Hanjalic, et al., "Automation of Systems Enabling Search on Stored Video Data" ('Hanjalic') and further in view of Sezan, et al., US Patent No. 6,236,395 ('Sezan').

Claims 8-11 stand rejected by the Examiner under 35 USC 103(a) as being unpatentable over Sezan, in view of Hanjalic and further in view of Barton, et al., US Patent No. 6,233,389 ('Barton').

Claims 12 and 14 stand rejected by the Examiner under 35 USC 103(a) as being unpatentable over Sezan, in view of Hanjalic.

Claim 8 was objected to and claims 8-11 were rejected under 35 USC 112, second paragraph. Appellant will amend these claims to overcome these rejections when the issues on appeal are decided. Therefore, these issues are not on appeal in this case.

Statement of the Grouping of Claims under 37 C.F.R. §1.192(c)(7)

All claims stand independently. Claims 1-7 are directed to a system for providing a digital television data broadcast service. Claims 8-11 are directed to a receiver for utilizing a digital television data broadcast service. Claims 12 and 14 are directed to a program summarizer. As such, the three groups of claims are separately patentable. Claim 8 does mention a summarizer, but does not include the embodiments of claim 12.

The claims within each group are also separately patentable. Claim 1 is directed to a digital television data broadcast service. Claims 2, 3, and 5 are alternative embodiments and are therefore separately patentable. Claim 4 adds a component not found in the other claims and is therefore separately patentable. Claims 6 and 7 are alternative embodiments of another component of claim 1 from claims 2, 3 and 5 and are therefore separately patentable.

Claim 8 is directed to receiver operable to receive and operate upon a digital television broadcast service. Claim 9 is an alternative embodiment of the decoding and demultiplexing component of claim 8 and is therefore separately patentable. Claim 10 is an alternative embodiment of the program-related information of claim 8 and is therefore separately patentable. Claim 11 is an alternative embodiment of the receiver having additional components and is therefore separately patentable.

Claim 12 is directed to a program summarizer and is therefore separately patentable from the broadcasting system of claim 1 and the receiver of claim 8. Claim 14 is an alternative embodiment of the program summarizer with regard to the other available information of claim 12. Therefore all claims stand independently.

## Arguments

Claims 1-7 stand rejected by the Examiner under 35 USC 103(a) as being unpatentable over Srinivasan, et al., US Patent No. 6,357,042 ('Srinivasan'), in view of Hanjalic, et al., "Automation of Systems Enabling Search on Stored Video Data" ('Hanjalic') and further in view of Sezan, et al., US Patent No. 6,236,395 ('Sezan').

### **Claim 1**

Claim 1 requires that 'a data service authoring subsystem operable to receive an audiovisual program and to author key clips...' The Examiner states that Srinivasan includes 'key clip data' of a defined metadata format. However, the metadata that is added to the video in Srinivasan is not 'key clip' data, with regard to how key clips are now defined in Appellants' claim 1. Further, the system of Appellants' amended claim 1 requires that the data service authoring subsystem author the key clips, which is not shown, taught nor suggested by Srinivasan. Srinivasan merely addresses adding annotations and identifying events in a video broadcast by adding information. In addition, Srinivasan does not transmit the data broadcast service in such a manner that allows the user to customize it at the client receiver.

Further Srinivasan does not use any descriptors in MPEG PSIP to correspond to the key clips of the instant application. The Examiner states that "...the Srinivasan et al. reference does not explicitly disclose or preclude that the aforementioned identification of clips such that there is a direct correspondence [to descriptors in the PSIP data]." Hanjalic does not use PSIP information for key clips, but uses it instead to identify key frames. See Hanjalic, section 1, fourth paragraph. Hanjalic refers to 'automated extraction of representative frames (key frames) providing content-based representation of the stored video, an approach is presented in Chapter 3.' Chapter 3 is entitled "An Automated Approach for Key Frame Extraction."

Key clips are not that same as key frames. See Appellants' specification on page 5, and the Sezan reference, column 16, lines 15-35. The Examiner further states that "The Srinivasan et al. reference suggests that it may be used in conjunction with automated natural scene change techniques similar to those described in the Hanjalic et al. reference in order to identify key frames." This indicates that the Examiner equates key frames with key clips, despite the Appellants specification that defines key clips to be different from key frames, and the limitation in claim 1 that "key clips are comprised of one of either at least one key event or at least one key object..."

With regard to the limitation that the stream is 'broadcast to at least one receiver in a format that allows customization at the receiver,' the Examiner states that the Srinivasan reference discloses a receiver which may utilize the broadcast information to further enable customization in conjunction with the ability to provide targeted advertisement using the aforementioned authoring information and refers column 32, lines 22-40. This text referred to by the Examiner addresses the inclusion of URLs in broadcast material to allow a user to view advertisements. The reference does not teach multiplexing a data broadcast service including key clips with audiovisual programs to be broadcast to a receiver wherein further customization may occur at the receiver.

The Examiner relies upon Sezan for this particular aspect. Sezan does not show teach or suggest identifying key clips at the digital television transmitter, nor a transmitter with this capability. Instead, Sezan sets forth a descriptor scheme that may enable such identification, but does not address the issue of providing this information in the context of a thin broadcast, where that information is used at the receiver. The limited reference of a 'receiver' in Sezan does not obviate Appellant' invention as claimed in claim 1.

Therefore, Appellants submit that claim 1 is patentably distinguishable over the prior art.

## **Claim 2**

With regard to claim 2, the combination of references does not teach the identification of key clips, for the reasons as applied to claim 1. Therefore, it would be impossible for the combination of references to teach that the key clips are referenced using the PSIP system time. The advantage of using MPEG-2 reference methods is in the standardization, where any receiver/client that is MPEG-2 compliant can utilize the time references as discussed on page 10, line 16 through page 11, line 16; page 12, line 10 through line 22; and page 13, line 13, through line 23, depending upon the situation in which the video content was provided. Therefore, Appellants submit that claim 2 is patentably distinguishable over the prior art.

## **Claim 3**

With regard to claim 3, as the combination of references does not teach the identification of key clips, it is impossible for the combination to teach identifying the key clips using the PCR/LTR MPEG-2 pair. The advantage of using MPEG-2 reference methods is in the standardization, where any receiver/client that is MPEG-2 compliant can utilize the time references as discussed on page 10, line 16 through page 11, line 16; page 12, line 10 through line 22; and page 13, line 13, through line 23, depending upon the situation in which the video content was provided. Therefore, Appellants submit that claim 3 is patentably distinguishable over the prior art.

## **Claim 4**

With regard to claim 4, the Examiner states that it would be obvious to incorporate a video reference generator for the purposes of referencing video frames to real time PCR information. However, as described in Appellants' specification at page 12, lines 4 through 22, the video reference generator generates references to key clips, not just 'video frames.' Srinivasan and Hanjalic do not use key-clips as defined in Appellants' claim 1, from which this claim depends, through claim 3.

The Examiner argues that 'key frames' are a particular kind of 'key clip.' He goes on to quote claim 1 as requiring "at least one key event or at least one key object." He then concludes "A 'key frame' is 'at least one key object' wherein the phrase 'at least' may be met by one or more objects. First, the quote from claim 1 is incomplete, and second, the Appellant has specifically defined key clips, key events and key objects.

To the first point, claim 1 requires 'key clips, are comprised of *one of either* at least one key event or at least one key object...' This claim requires that the key clip be either a key object or a key event. A key frame is not included in the possible composition of a key clip for this claim, even though the definition may include key frames. However, even if Appellants were using the term 'key frame' the key frames of Appellants' invention are different from those identified in Srinivasan and Hanjalic.

Key frames, Hanjalic, are representative frames of a particular video sequence. See Hanjalic, section 1, paragraph 4. Srinivasan does not mention key frames or key clips, as Srinivasan is directed to an authoring system that allows multiple editors to create an annotation stream. There is no mention of key frames or key clips, although there is a mention of clips, be these are merely video clips. See Srinivasan column 13, lines 22-27.

#### **Claim 5**

The combination of references does not teach using start and ending flags within an MPEG-2 transport stream to identify key clips within an audiovisual program as is required by Appellants claim 5. Srinivasan does not disclose the use of MPEG-2 presentation time stamps for referencing key-clips as the term key-clips is defined in claim 1, from which these claims depend. The advantage of using MPEG-2 reference methods is in the standardization, where any receiver/client that is MPEG-2 compliant can utilize the time references as discussed on page 10, line 16 through page 11, line 16; page 12, line 10 through line 22; and



page 13, line 13, through line 23, depending upon the situation in which the video content was provided.

Hanjalic is again directed to using key frames and there is no mention of start times or stop times. Sezan also does not use the start and stop times required by claim 5. Therefore, Appellants submit that claim 5 is patentably distinguishable over the prior art.

#### **Claim 6**

The combination of references does not teach a defined format identifying key clips using start and ending references within an MPEG-2 transport stream to identify key clips within an audiovisual program as is required by Appellants claim 6. Srinivasan does not identify key clips, as discussed above. Hanjalic is directed to using key frames and there is no mention of start times or stop references of key clips. Sezan also does not use the start and stop references required by claim 6. Therefore, Appellants submit that claim 5 is patentably distinguishable over the prior art.

#### **Claim 7**

The combination of references does not address the inclusion of a defined format in which key clips are identified at the transmitting end. If the combination of references were considered valid and operable, the resulting combination would include starting and ending references to segments of “interactive icons, text, animated graphics and sounds (Srinivasan, column 13, lines 26-27)”. The Sezan reference is directed to identifying key clips at the receiving end, there is no indication that the description scheme is applied at the transmitting end. Hanjalic does not overcome these deficiencies in the combination, as it only uses PSIP information for key frames.

Additionally, Srinivasan does not show that the key clips, as that term is now defined in Appellant’s claim 1, should be identified including their content. Srinivasan does include

events, such as touchdowns (see column 28, lines 65-67); it does not include a defined set of key clips of either key events or key objects. The events documented and annotated in Srinivasan are any event that occurs, not a defined key event or key object, nor does Srinivasan coordinate descriptors from MPEG PSIP data to descriptors in the key clip data. Therefore, Appellants submit that claim 7 is patentably distinguishable.

**Claims 8-11 stand rejected by the Examiner under 35 USC 103(a) as being unpatentable over Sezan, in view of Hanjalic and further in view of Barton, et al., US Patent No. 6,233,389 ('Barton').**

#### **Claim 8**

Claim 8 requires that the summarizer "includes an inference engine operable to combine said audiovisual program description with said PSIP information..." The confusion related to the term 'said audiovisual program description' will be cleared up to indicate that it will be 'said program-related information.' The Sezan reference does not show, teach nor describe inclusion of key clip information, as the term key clip is defined in Appellants' specification. Key clips are not the same as key frames. See Appellants' specification page 5, and Sezan, column 16, line 15-35. It can be seen that Sezan is a process for developing a descriptor based upon the user, the equipment or the program, while the instant application is directed to identification of key clips based upon the user preferences.

Amended claim 8 requires a demultiplexing and decoding module to extract program-related information, wherein the program-related information is an MPEG-2 encoded audiovisual program, PSIP data, and references to key-clips. Sezan does not show, teach nor suggest such a demultiplexing and decoding module. Sezan does not disclose extracting MPEG-2 encoded programs, or the Program and System Information Protocol data. In essence, Sezan discloses a *description scheme*, the instant invention as claimed claims an implementation of a *system* that may use a description scheme under the MPEG-2 standard

and its associated components. Similarly, Sezan does not disclose a summarizer that uses PSIP data and references to key-clips to create the summaries. As discussed above, Hanjalic does not disclose extracting PSIP information to identify key clips, being directed to key frames.

Claim 8 now requires both a short-term and a long-term memory. The short-term memory allows the user to store programs and/or their associated summaries. This provides the user quick access to some content. The long-term memory allows storage of larger amounts of programs and their associated summaries. In Sezan, a data storage unit 50 is shown, but it does not state whether it is long-term or short-term storage. The Examiner argues that the hard drive of Sezan or Barton could comprise both long-term and short-term memory. Appellants disagree that one element can be two different things. The Examiner further states that Appellants do not disclose any particular advantage or rationale why separate hard drives would be utilized. If one were to assume that the Examiner were correct in assuming that the short-term and long-term storage, the short-term storage would have to provide access from an audiovisual user navigation interface, and the long-term storage would have to use a database searching mechanism, and therefore the advantage of using separate hard drives would become apparent. See Appellants' specification, pages 14 and 15.

Further, the Sezan reference is directed to a descriptor scheme that does not have a summarizer with an inference engine that also extracts key clips using references in the broadcast. The Examiner directs the Appellants to the analysis module 42 and the description scheme generation module 44 and the text at column 8, lines 21-67. The referenced text depicts the operation of the analysis module to generate summaries using several sources of information. However, there is no reference to extracting key clips using the references supplied in the broadcast, as the summarizer is operable to do in Appellants' claim 8. As the

extraction using references provided has several advantages over having to generate these summaries using detailed video analysis techniques.

As the combination of references does not show, teach nor suggest the demultiplexing and decoding module, the short-term *and* long-term memory, nor the inference engine, Appellants submit that claim 8 is patentably distinguishable over the prior art.

#### **Claim 9**

Claim 9 is directed to filtering within individual programs within a broadcast. Sezan is not directed to this type of filtering, but to providing a descriptor that may allow such filtering. The reference within Sezan cited by the Examiner discloses a knowledge based system used in creating a summary, not generating program related information of a broadcast that includes key clips, as claimed in claim 9.

With regard to claim 9, Sezan does not show a receiver with a decoding and demultiplexing module to produce program-related information, as program-related information is defined in claim 8, for within program filtering of audiovisual programs, where the receiver also includes both short-term and long-term storage.

With regard to claim 9, Sezan Barton and Hanjalic, in combination, do not show a receiver with a decoding and demultiplexing module to produce program-related information, as program-related information is defined in claim 8, for within program filtering of audiovisual programs, where the receiver also includes both short-term and long-term storage. While the claims are construed in light of the specification, if the Appellant provides a specific definition in the specification, the words of the claim must be given that definition *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed Cir. 1989), *In re Vogel*, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970). Appellants have defined within-program filtering to be based upon key events and key objects (Specification, page 5, lines 11-14), and

Sezan, Barton and Hanjalic do not show such a definition for within-program filter.

Appellants submit that claim 9 is patentably distinguishable over the prior art.

#### **Claim 10**

With regard to claim 10, Sezan does not disclose storing a database index of program-related information, as required by claim 10, but a means for storing and archiving entire programs. See column 9, lines 19-22. Sezan does not show that program-related information further comprises description information used as indices for archival of audiovisual programs in conjunction with long-term storage and short-term storage. More than likely, the storage of program-related information for database indexing would occur in the long-term storage. However, there is no analogy to such long-term storage in Sezan, as discussed above.

With regard to claim 10, Sezan and Barton do not show that program-related information further comprises description information used as indices for archival of audiovisual programs in conjunction with long-term storage and short-term storage. Hanjalic mentions using PSIP information to extract and identify key frames, but makes not mention of a database or indexing and sorting

Appellants therefore submit that claim 10 is patentably distinguishable over the prior art.

#### **Claim 11**

With regard to claim 11, Sezan, Barton and Hanjalic do not show a receiver where a register of user preferences used to create summaries that can be stored in both long-term and short-term storage. Further, the combination does not show a receiver where user preferences are used not only by a summarizer module but also by the decoding and demultiplexing module to account for user preferences at the intake of an MPEG-2 encoded audiovisual program with its associated PSIP data and references to key-clips. The combination does not

show extraction of the key-clips based upon the references in the broadcast, which has several advantages as point out above. Therefore, Appellants submit that claim 11 is patentably distinguishable.

**Claims 12 and 14 stand rejected by the Examiner under 35 USC 103(a) as being unpatentable over Sezan, in view of Hanjalic.**

#### **Claim 12**

Claim 12 requires a "...a key clip extraction module operable to extract key clips from said audiovisual program..." Contrary to the Examiner's assertion, the key frame extraction module 76 of Sezan is not the same as a key clip extraction module. Additionally, the Examiner's reference to component 76 in Sezan as being a key-clip extraction table, Appellants believe the Examiner errs. Component 76 in Sezan is described as a key-frame summarizer. See col. 8, line 54. A component that produces key-frame summaries is not the same as a key clip extraction module that extracts key clips from an audiovisual program.

In addition, no reference to any program map of video references derived from program-related information such as is required by "a key-clip map table" is taught, shown or suggested by Sezan.

Claim 12 also requires a 'description extraction module.' Apparently, the Examiner has inferred that the analysis module 42 of Sezan is equivalent to the description extraction module and the program and system information extraction module. However, there is no teaching or suggestion of either an inference engine or a key-clip map table. If the Examiner intended to show that the analysis module 42 is also the inference engine, Appellants submit that this is not inherent to the functions of the analysis module as the program-related information could be produced in other ways. There is not enough information disclosed in the Sezan reference to indicate that this component is anticipated by Sezan.

There must be some suggestion in the cited reference to produce the claimed invention. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). The Sezan reference is very specific in what the program summarizer is capable of, and there is no mention, reference or suggestion of that having a description extraction module or an inference engine.

With regard to Hanjalic, there is no 'summarizer' wherein 'descriptors that directly correspond to descriptors in the PSIP data,' contrary to the Examiner's assertion. Hanjalic discloses using PSIP data to identify key frames of video sequences in sections 5.1 and 5.2, referred to by the Examiner. In section 5.3, Hanjalic discloses a video browsing system, but it does not have the components set forth in claim 12, nor does it operate upon key clips.

Appellants therefore submit that claim 12 is patentably distinguishable over the prior art.


#### **Claim 14**

As discussed in detail above, Sezan does not show an inference engine, much less an inference engine that uses other available program related information, where that other information is either user preferences or information from the World Wide Web. Further, the Sezan reference does not teach, show nor suggest an inference engine, much less one that uses information downloaded from a web site in its operation. Hanjalic also does not teach an inference engine. Appellants submit that claim 14 is patentably distinguishable over the prior art.

Having shown that the prior art does not teach nor suggest the appellant's invention as claimed in claims 1-12 and 14, appellant requests that the Examiner's final rejection of these claims be reversed.

Respectfully submitted,

Marger, Johnson & McCollom, P.C.  
1030 SW Morrison Street  
Portland, OR 97205  
(503) 222-3613

  
\_\_\_\_\_  
Julie L. Reed  
Reg. No. 35,349

## APPENDIX TO APPELLANTS' BRIEF

July 28, 2003

Mail Stop Appeal Brief – Patents  
Board of Patent Appeals and Interferences  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The claims on appeal in the above-referenced application are reproduced herein below as follows:

1. (previously presented) A system for providing a digital television data broadcast service, comprising:

a data service authoring subsystem operable to receive an audiovisual program and to author key clips, wherein key clips are comprised of one of either at least one key event or at least one key object, and provide key clip data in a defined format identifying the key clips of the audiovisual program

a data service encoder operable to receive said key clip data and Program and System Information Protocol data, wherein key clip data includes descriptors that directly correspond to descriptors in the Program and System Information Protocol data, and finalize contents of said data broadcast service; and

an MPEG-2 system multiplexer operable to multiplex said contents of said data broadcast service with encoded audiovisual programs and produce a MPEG-2 transport stream to be broadcast to at least one client receiver in a format that allows customization at the receiver.

2. (original) The system as claimed in claim 1, wherein said key clips are references using Program and System Information Protocol system time.



3. (previously presented) The system as claimed in claim 1, wherein said key clips are referenced using Local Time reconstructed in the receiver from transmitted MPEG-2 Program Clock References (PCR) and Local Time References pair.
4. (original) The system as claimed in claim 3, wherein said system includes a video reference generator.
5. (original) The system as claimed in claim 1, wherein said key clips are referenced using starting and ending flags transmitted in synchronization with an element of said audiovisual program.
6. (original) The system as claimed in claim 1, wherein said defined format identifying key clips of an audiovisual program further comprises starting and ending references for said key clips.
7. (original) The system as claimed in claim 1, wherein said defined format identifying key clips of an audiovisual program further comprises an identification of the content of the key clip, wherein said content includes events and objects associated with said key clip.
8. (previously presented) A receiver operable to receive and operate upon a digital television data broadcast service, comprising:
  - a demultiplexing and decoding module to extract program-related information, wherein the program-related information further comprises an MPEG-2 encoded audiovisual program, Program and System Information Protocol data, and references to key-clips from the digital television data broadcast service;
  - a summarizer operable to receive the audiovisual program PSIP data and references to key-clips and to create summaries of the audiovisual program, using the references to key-clips to extract the key-clips from the program, wherein the summarizer includes an inference engine operable to combine said audiovisual program description with said PSIP information, wherein descriptors in the audiovisual program description directly correspond to descriptors

in the PSIP information, user preferences, and any other available program information to produce program-related information and key-clip information;

a navigation module operable to allow a user to browse said program-related information;

a short-term memory to allow short-term storage of the summaries; and

a long-term memory to allow long-term storage of the programs and the summaries, wherein the long-term storage is accessible from the navigation module.

9. (previously presented) The receiver as claimed in claim 8, wherein said decoding and demultiplexing module is operable to produce program-related information for within-program filtering of audiovisual programs.

10. (previously presented) The receiver as claimed in claim 8, wherein said program-related information further comprises description information usable as indices for database archival of said audiovisual programs.

11. (previously presented) The receiver as claimed in claim 8, wherein said receiver further comprises a register of user preferences, wherein said decoding and demultiplexing module and said summarizer use said user preferences in generating said program-related information and said summaries.

12. (previously presented) A program summarizer operable to receive a data broadcast service for filtering and generating summaries of audiovisual programs, comprising:

a description extraction module operable to parse and extract an audiovisual program description provided by said data broadcast service;

a program and system information extraction module operable to extract the program and system information protocol (PSIP) information and MPEG-2 System Information from said data broadcast service;

an inference engine operable to combine said audiovisual program description with said PSIP information, where descriptors in the audiovisual program information directly correspond to descriptors in the PSIP information, user preferences, and any other available program information to produce program-related information and key-clip information;

a key-clip map table operable to take said key-clip information and produce a map of video references and times;

a key clip extraction module operable to extract key clips from said audiovisual program using references to the key clips in the data broadcast service; and

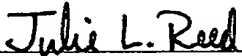
a summary composition module operable to produce summaries of said audiovisual program and provide it to a viewer.

13. (canceled)

14. (original) The summarizer of claim 12, wherein said any other available program information further comprises information downloaded from a web site.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.

  
\_\_\_\_\_  
Julie L. Reed  
Reg. No. 35,349

MARGER JOHNSON & McCOLLOM, P.C.  
1030 SW Morrison Street  
Portland, OR 97205  
(503) 222-3613  
**Customer No. 20575**